Fieldwork



The "new frontier" of underwater photography - taking macro images of the tiny denizens of the deep which migrate towards the surface after sunset



A Juvenile Flying fish, family *Exocoetidae*, photographed against the surface. On the title spread, the larval stage of a Spotfin flounder *Cyclopsetta fimbriata*.



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Spotfin flounder Cyclopsetta fimbriata.

rom the time we begin our first lesson in scuba diving, we are taught to get in the water and drop down letting gravity take its hold. It is enchanting, this euphoric feeling of weightlessness, or a chance visual encounter with wildlife in their world. Soon many of us take up underwater photography to capture and share these moments. In due course, you soon begin seeking out exotic locations to go diving, in search of cool animal encounters and even wilder underwater scenics. In many ways it can become an addiction. For many photographers, it is about capturing the beauty, the challenge of underwater imagery, and documenting as many creatures as possible. We are struck by the colors, the patterns and as we drill down further, capturing the behavior on film. I think innately we are all pioneers in our own right. Every time we enter the waters, we feel like we are going where no others have gone before. The possibility exists to see and photograph something that no one else has seen before almost haunts us at the core. As our imagery progresses, it becomes grippingly clear that as photographers, it is our solemn duty to share our captures both rare and beautiful, if for no other reason than to enhance the human experience and educate the masses of this world within a world living just below that blue horizon line. Whether you are attracted to warm tropical waters with whales, dolphins and turtles, muck dives

filled with fascinating little creatures, dramatic caves, wrecks, and that list goes on and on, there comes a time in every underwater photographer's life where we crave more. Let's face facts... some of us are artists in the making, others adrenalin junkies, and some just have an unquenched thirst for knowledge.

In the last few years, black water diving is taking the underwater photography world by storm - all over the world! Why? Just look at some of the images. We are documenting some of the coolest creatures ever seen on the planet! We are photographing in-situ that which marine scientists have dreamed of. But more importantly, we are documenting our world underwater - for us and for science. And it's been there all along.

The world's largest migration on Earth occurs every single night...in every ocean ...in every lake. Perhaps, even in any body of water. It is called a Vertical Migration. Also referred to as the Diel vertical migration, it is the journey of phytoplankton from the depths to the shallows. Every night organisms move up from the mesopelagic zones to the epipelagic zones. But in fact we're discovering larval creatures that will eventually reside in even deeper depths once matured.

Here, we are diving in the Gulf Stream Current. Just a few miles off the coast of Riviera Beach, Florida, we find ourselves in about 150-200 mt/500-650 ft. of

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Fish in a Pyrosome. Pyrosomes, genus Pyrosoma, are free-floating colonial tunicates that live usually in the upper layers of the open ocean in warm seas.



Left, jellyfish Orchistoma sp with an amphipod on top; right, the larval stage of a Candy basslet Liopropoma carmabi.



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Left, a so-called Sea Angel - Sea angels are a large group of extremely small, swimming sea slugs. Right, a jellyfish belonging to the family Pandeidae.



The stunningly beautiful larval stage of the Tripodfish Discoverichthys praecox.







Top, a juvenile Filefish; bottom, the larval stage of a Flying fish. Top right, Acorn worm *Enteropneusta* sp.



water. We are not diving that deep, of course, but drifting in it, to perhaps 12-15 mt/40 or 50' depth. We avoid going deeper because there are cross currents, not wanting to be whisked away and we need to stay relatively close to our boat. The Gulf Stream Current primarily travels from the Gulf of Mexico, through the Straits of Florida up the east coast of the USA up to Iceland, Greenland, the British Isles and back again somewhere around the Tropic of Cancer meridian. So what is black water Diving? It is diving over depth, in the open ocean at night. This is not for the faint of heart. You should be at least advanced certified or better. You must be very comfortable with several night dives under your belt and your equipment must be in top condition. Our set up: here we follow a large illuminated

ball with a float line that is 12-15mt/40-50' long, with lights as markers every

3mt/10 feet. At the ceiling there are 3 bright lights shining on the super large ball, at the midpoint is an orange ball, and at the end of that line are 3 blinking lights. Visually this is very helpful to gauge your depth by simply looking up as there is nothing but the blackness around you for a reference. Our job as underwater photographers is to follow the ball. The dive boat follows the float line and visually keeps track of the divers. This downline also tends to attract the photosensitive creatures, and is there to enhance safety, as anyone can hold onto the line if they feel the need. Plus, several light sensitive creatures tend to cluster closer to the light, while others shy away. There are other operations that handle this as a tethered dive, but here we prefer the freedom to be unterhered, and we are all very experienced divers and underwater photographers. Also, there

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Scaly tailed Mantis shrimp Lysiosquilla scabricauda larval stage.





Left, larval stage of a Ceriantharian tube anemone; right, larval stage of another tube-dwelling anemone.

Larval stage of Tonguefish, a flatfish in the family Cynoglossidae. They are distinguished by the presence of a long hook on the snout overhanging the mouth.

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Sea Butterfly Corolla spectabilis. Sea butterflies, scientific name Thecosomata, are a taxonomic suborder of small pelagic swimming sea snails.

Left, Exocoetidae Flying fish larval stage. Bottom, Ring jellyfish Aeguorea sp.

are other locations where folks are creating "bonfire dives", which is basically the same theory although not in deep water, but rather in shallow inshore dive water. Your diving skills and buoyancy abilities are paramount while drifting in the darkness. The environment is filled with gelatinous flimsy creatures. Every time you kick, it sends a shock wave through the water column sending subjects into a spin. Controlled breathing helps too, because you can't blow bubbles heavily or you blast all your gelatinous subjects to smithereens. Your whisper is their Category 6 hurricane! It is very important to not dive under your buddies, as your bubbles might blow one of their subjects out of sight. Stay calm and relaxed and focused. Check your gauges regularly and always maintain

an extra reserve of air in case of emergencies. In Florida the weather can change in an hour. As a side note, keep a snorkel handy, in case it is flat calm, you might want to go for some of those delicious reflection shots at the surface while waiting for the boat to pick you up. At the end of the day, we are documenting life on our planet, which may reflect the balance of nature or be an introduction to things we just never imagined. Something previously reserved for science expeditions is now becoming a "new thing" without the lab, but merely a camera and an underwater housing. We can use our photography to impact the rest of the world because what we are photographing is important... important for education, science and also as art.

Aequorea jellyfish with - presumably commensal - fish.

Top left, larval stage of Scrawled filefish; top right, juvenile Flying gurnard Dactylopterus volitans. Bottom left, Reef squid feeding on fish prey; bottom right, Leptocelus sp. Snake eel larva.

Juvenile fish - possibly trevallies - in a salp. This is a barrel-shaped, planktonic tunicate. It moves by contracting, thus pumping water through its gelatinous body.

